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| HOUSTON ELISEEVA 4 MILITIA DRIVE, SUITE 4 LEXINGTON, MA 02421 | | | EXAMINER SHINGLETON, MICHAEL B | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/594,642

Applicant(s)

KAUFMANN ET AL.

Examiner

Michael B. Shingleton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 12-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's election of Species IV in the reply filed on 01-08-2009 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Before the examiner goes into great detail of the rejection, applicant should note that the examiner cannot read limitations into the claims that are just not there See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Also in claims drawn to structure these claims must be distinguished by structure rather than function, See *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429 and MPEP 2114. Also note the recent *Halliburton* decision Fed. Cir., 2007-1149 that states among many things that the patent drafter is in the best position to resolve ambiguity in the claims. With these things in mind even though claim 1 is almost a page long, this claim reads on a common PIN detector arrangement for the I area is an active area, etc. etc. The claims are heavy on "names", but very light (ambiguous) on claiming the actual structure and again the examiner cannot read limitations into these names that are just not specifically recited. For example if an applicant recited an "active region" but did not recite that the "active" region is composed of a Boron doped Silicon region within a diamond well, the examiner cannot read this "active" region as being composed of a Boron doped Silicon region within a diamond well. Simply put, a name does not impart, most of the time, specific limiting structure and again in claims drawn to structure what the structure is absolutely needed so that the public notice function is complied with and that a competitor can avoid infringement (Again see the *Halliburton* decision.). Similarly, note claims like claim 15 where applicant recites that the image sensor is of an "A", "B" or "C" type. The examiner uses "A", "B" and "C" to represent the specific names presented by the claim(s) rather than cloud this office action up with lengthy names, but this is the point these are only names no matter how long the names are and do not impart further limiting structure. One could call the image arrangement of the prior art anything one desires; this does not provide specific limitations of structure in accordance with MPEP 2114 and accordingly cannot provide for a patentable distinction in claims drawn to structure. Hopefully, this will aid applicant in providing real limitations of patentably distinguishing structure so that the structure claimed is not ambiguous and the public notice function is complied with as recited by *Halliburton*. The side-by-side multiple metal areas that are separated by oxide etc. if specifically recited might make for a patentable invention, but as of yet this which appears to be the heart of the elected invention is not specifically claimed.

Claims 23, 24, 26 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In newly presented claim 23 applicant is very specific that one invention is the situation where there is one and only one floating photogate yet all the disclosed inventions have a plurality of floating gates where there are floating gates like in Figure 1. In fact the whole invention seems to be directed to the voltage dividing function that takes more than one photo-gate and to now claim but a single photogate is claiming an invention not presented before in the original disclosure.

Claims 1-15, 23-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following rejection contains claims that are non-elected and this is only because of the dependency on claim that are themselves indefinite. Also because many of the claims recite means but it is not clearly enough defined what the exact structure is to be encompassed by these means from the specification this makes the scope of the claims indefinite.

The applicant states:

said at least two contact areas ~~(FC1, FC7, FI1, FI7)~~, said contact areas ~~(FC1, FC7, FI1, FI7)~~ being electrically isolated from said at least one floating area ~~(FG2, FG3, FI2, FI3, FI4)~~ yet electrically coupled to at least one of said at least one floating area ~~(FG2, FG3, FI2, FI3, FI4)~~.

But even in the case of capacitively coupled this makes these contact areas electrically coupled to the floating area. If it is electrically coupled, it is not also electrically isolated as well. These are contradictory terms which makes the scope of the claims unclear. Note that these contradictory terms appears in many claims and all these situations are accordingly rejected by this rejection. The examiner has only specifically copied the example from claim 1, so as to not cloud the rejection with an over abundance of specific quotes. The structure that applicant is trying to claim is likewise ambiguous because no specific structure is recited that makes things both electrically isolated and not electrically isolated and the examiner knows of no structure that can be both at the same time. Again as noted above applicant is in the best position to resolve ambiguity in the structure claimed. It is also noted that applicant sets forth many terms of "means". As noted in the rejection below, since the means statement is not followed by a pure statement of function, 112 sixth paragraph provisions do not apply. However, if

112 sixth paragraph provisions were to apply, it is unclear as to what structure the various means are to represent in the specification. The specification does not specifically identify means for YYY as being composed of these and only these elements. Without an explicit definition in the specification as to exactly what structures are to compose a recited means for YYY, then it is impossible for anyone to determine 1) the scope of the claim and 2) the equivalents thereof should 112 sixth paragraph apply. See MPEP 2183.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 9, 13-22, 25, 27 and 29 in so far as understood are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gu US 6,229,192 (Gu).

Gu discloses a method for operating a “pixel” for use in a image sensor that is composed of a common PIN arrangement. Here the p and n areas or the junctions between the p and I and n and I can be considered charge storage means (Note that since applicant recites that the means is composed of a particular charge type etc. that 112 sixth paragraph provisions do not apply, furthermore as it is unclear as to exactly what structure is to be included and excluded by the means one cannot determine the scope of the claims as noted above.), the active area is the I area which also serves as the charge separation means that is composed of at least one floating area structure and thus again 112 sixth paragraph provisions do not apply. There are contacts to the I area via the junction contacts. The recitation that the contact areas being electrically isolated from the at least one floating area yet electrically coupled to the at least one floating area does not make sense and certainly does not specifically set forth any structure. Like in Figure 2 of the instant application the junctions are apparently considered to be “electrically isolated” and thus given the applicant’s own reasoning the prior art junctions are every much “electrically isolated” as applicant and electrically non-isolated. The examiner truly does not know what structure applicant is trying to claim here, but again the examiner cannot read limitations into a claim that is not there see above. Also note that applicant may argue that the prior art does not have “floating areas” etc., but with all these items these are mere names that again do not set forth any specific structure. If applicant were to claim a Boron implanted silicon area in a diamond well then this could be checked to see if this exists in

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the prior art, but claiming arbitrary things as specific things but one cannot determine the specifics and then things of the prior art can be labeled with the arbitrary markers. In other words anyone can call most anything a "floating area" etc. as these are arbitrary naming of areas regions, etc.. Applicant gives no specific definition that defines the term "floating area" etc. as being this specific composition and only this specific composition. The plain meaning of the terms must be given and these are very broad terms. Also note that step like lateral electric field is also not very defining as even a continuous function can be considered step like where there are an infinite number of steps. Furthermore, "lateral" is not very defining as a device can be turned around and viewed from a plurality of different perspectives i.e. it is arbitrary. What is top to one is the bottom to another for example. Likewise, each period of the modulation frequency is divided into a number of intervals is not very clear. Intervals of what? Plus the incident light that applicant intended to be modulated is incident on a pixel and thus as the same structure is recited by the prior art the same function as apparently meant by applicant is inherently present in the prior art. As with all imagers the data is meant to be read out and thus the examiner does not see anything patentable in these steps. Also depending on how fast the modulation frequency is and accordingly to the nature of a discrete imager as in the prior art it takes time for all the charge to be completely removed and thus inherently there is carriers that are stored from more than one period of the modulation frequency in the prior art. The amount of stored charge maybe small but the claims are not specific as to how much.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gu US 6,229,192 (Gu).

Gu as applied above and the following: Claim 5 is one of the claims that actually recites structure namely that the contact areas are made from polysilicon, however, polysilicon or as it is commonly known as just poly is a common material for contact areas and accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the contact areas of Gu with poly given the art-recognized equivalence of these materials. Claim 12 recites the common electrical amplifier type circuits used to read a pixel. As these are common circuits for reading a pixel it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize any of

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these conventional circuits to do so as this would only result in the use of these circuits for their well known and intended purpose.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker, can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in dark ink, reading "Michael B. Shingleton". The signature is written in a cursive, flowing style with a long horizontal line extending from the end.

MBS
March 13, 2009

/Michael B. Shingleton/
Michael B Shingleton
Primary Examiner
Group Art Unit 2815